

CLAIMS

What is claimed is:

1. A cleansing device (10) comprising:
 - (a) a web of fibers forming a substrate (11); and
 - (b) a solid cleansing agent (12) distributed substantially throughout said substrate (11) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the solid cleansing agent (12) for cleansing purposes.
2. The cleansing device (10) of claim 1 wherein the cleansing agent (12) comprises a pourable soap.
3. The cleansing device (10) of claim 2 wherein the pourable soap comprises sodium soaps generated from palm oil, coconut oil, olive oil, castor oil and safflower oil.
4. The cleansing device (10) of claim 2 wherein the pourable soap comprises sodium soaps containing about 5 to 35% glycerine and/or 0 to 10% propylene glycols.
5. The cleansing device (10) of claim 2 wherein the pourable soap comprises at least between 1 and 20% sodium oleate.
6. The cleansing device (10) of claim 2 wherein the pourable soap is generated from organically produced oils.
7. The cleansing device (10) of Claim 2, wherein the pourable soap comprises sodium soaps and one or more of sugars, ethyl alcohol, rosins, polyhydroxy compounds and propylene glycols.
8. The cleansing device (10) of claim 2 wherein the pourable soap contains about 1 to 30% synthetic detergents.
9. The cleansing device (10) of claim 8 wherein the synthetic detergents includes a combination of: (a) anionic synthetic detergents, (b) amphoteric detergents and (c) nonionic detergents.

10. The cleansing device (10) of claim 9 wherein the anionic synthetic detergents are present in an amount from about 0 to 15% on a 100% active basis.

11. The cleansing device (10) of claim 9 wherein the amphoteric detergents are present in an amount from about 0 to 7% on a 100% active basis.

12. The cleansing device (10) of claim 9 wherein the nonionic detergents are present in an amount from about 0 to 6% basis on a 100 % active basis.

13. The cleansing device (10) of claim 1 wherein the cleansing agent (12) contains about: 20 to 30% Triethanolamine, 7 to 19% Cocoate soap, 14 to 36% Palmitate soap, 7 to 9% Glycerine and 5 to 22% Stearic acid.

14. The cleansing device (10) of claim 1 wherein the cleansing agent (12) contains about: 10% stearic acid, a fat charge in the range of 41.5 to 44.0% , and a palm oil to coconut oil ratio of 80 to 20.

15. The cleansing device (10) of claim 1 wherein the cleansing agent (12) contains about: 5 to 12 % stearic acid; 35to 50% fat charge and Palm oil to Coconut oil ratios from 50:50 to 90:10.

16. The cleansing device (10) of claim 1 wherein the cleansing agent (12) contains about 2 to 35% triethanolamine (TEA).

17. The cleansing device (10) of claim 1 wherein the cleansing agent (12) includes about: 20 to 30% Triethanolamine, 7 to 19% Cocoate soap, 14 to 36% Palmitate soap, 7 to 9% Glycerine and about 5 to 22% Stearic acid.

18. The cleansing device (10) of claim 1 wherein the cleansing agent (12) includes about: 10% stearic acid, a fat charge in the range of 41.5 to 44.0% , and a palm oil to coconut oil ratio of 80 to 20.

19. The cleansing device (10) of claim 1 wherein the cleansing agent (12) includes about: 5 to 12 % stearic acid; 35 to 50% fat charge and Palm oil to Coconut oil ratios from 50:50 to 90:10.

20. The cleansing device (10) of claim 1 wherein the cleansing agent (12) includes, by weight percentage about:

Glycerine	10 to 30%,
Sodium Cocoate	8 to 20%,
Sodium Palmitate	12 to 20%,
Sodium Ricinulate	9 to 17%,
Safflower Oil Soap	2 to 5%,
Sorbitol	0 to 8%,
Sorbitan Oleate	2 to 8%,
Soybean Protein	2 to 8%, and
Titanium Dioxide	0 to 0.2%.

21. The cleansing device (10) of claim 1 wherein the cleansing agent (12) includes, by weight percentage about:

Glycerine	14-25%,
Sodium Cocoate	8 - 16%,
Sodium Palmitate	11 - 20%,
Propylene Glycol	0-6.0%,
Sorbitol	0 - 8%,
TEA Lauryl Sulfate (40% a.i.)	5 - 12%,
Cocoamidopropyl Betaine (28% a.i.)	5 - 10%,
Sodium Laureth Sulfate(30% a.i.)	5 - 15%,
Sodium Oleate	1 - 5%, and
Acetamide MEA	0- 5.0%,

wherein a.i. designates an active ingredient.

22. The cleansing device (10) of claim 1 wherein the substrate (11) comprises synthetic materials.

23. The cleansing device (10) of claim 1 wherein the substrate (11) comprises naturally occurring materials.
24. The cleansing device (10) of claim 1 wherein the substrate (11) is reticulated.
25. The cleansing device (10) of claim 1 wherein the substrate (11) is non-reticulated.
26. The cleansing device (10) of claim 1 wherein the substrate (11) is selected from the group consisting essentially of porous polyurethane, polyethylene or cellulose.
27. The cleansing device (10) of claim 1 wherein the substrate (11) comprises a sponge.
28. The cleansing device (10) of claim 1 wherein the substrate (11) comprises woven materials.
29. The cleansing device (10) of claim 1 wherein the substrate (11) comprises non-woven materials.
30. The cleansing device (10) of claim 1 wherein the substrate (11) comprises cotton and loofah-based materials.
31. The cleansing device (10) of claim 1 wherein the weight ratio of cleansing agent (12) to substrate (11) is between about 1 to 1 and 10 to 1.
32. The cleansing device (10) of claim 1 wherein the weight ratio of cleansing agent (12) to substrate (11) is about 7 to 1.
33. The cleansing device (10) of claim 1 further including fragrances.
34. The cleansing device (10) of claim 1 further including skin moisturizers.
35. The cleansing device (10) of claim 1 further including one or more of anti-cellulite substances, anti-aging substances, herbal substances, natural extracts and synthetic extracts.
36. The cleansing device (10) of claim 1 further including colorants.

37. The cleansing device (10) of claim 1 further including one or more active ingredients comprising sunscreen agents, antimicrobials, antiseptics and/or healing agents and combinations thereof.

38. The cleansing device (10) of claim 1 further including one or more skin feel additives.

39. The cleansing device (10) of claim 1 wherein the cleansing agent (12) comprises a solidified pourable soap having a melting point between 120 to 200°F.

40. A method of manufacturing a cleansing device (10), comprising the steps of:

- (a) providing a cleansing agent (12) that is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range;
- (b) heating the cleansing agent (12) to within the second temperature range such that the cleansing agent (12) is in pourable molten form;
- (c) applying the molten cleansing agent (12) to one or more portions of a web of fibers that forms a substrate (11); and
- (d) allowing the cleansing agent (12) to cool down to within the first temperature range to resolidify on the substrate (11).

41. The method of claim 40 wherein the step (d) further includes the steps of allowing the cleansing agent (12) to cool down to within the first temperature range without a forced drying step.

42. The method of claim 40 wherein the step of heating the cleansing agent (12) to within the second temperature range includes the steps of heating the cleansing agent (12) to within about 120 to 200°F.

43. The method of claim 40 wherein the step of allowing the cleansing agent (12) to cool down to within the first temperature range further includes the steps of allowing the cleansing agent (12) to cool down to about room temperature.

44. The method of claim 40 wherein the step (d) further includes the steps of allowing the cleansing agent (12) to cool down to within the first temperature range with a forced drying step.

45. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further comprises the steps of distributing the molten cleansing agent (12) substantially throughout said substrate (11) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the resolidified cleansing agent (12) for cleansing purposes.

46. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further comprises the steps of dipping the substrate (11) into the molten cleansing agent (12).

47. The method of claim 46 further comprising the steps of compressing the substrate (11) while dipping the substrate (11) into the molten cleansing agent (12).

48. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further comprises the steps of immersing the substrate (11) into the molten cleansing agent (12).

49. The method of claim 48 further comprising the steps of compressing the substrate (11) while immersing the substrate (11) into the molten cleansing agent (12).

50. The method of claim 48 wherein the steps of immersing the substrate (11) into the molten cleansing agent (12) further includes the steps of maintaining the substrate (11) immersed from about 5 to 50 seconds.

51. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further comprises the steps of injecting the molten cleansing agent (12) into the substrate (11).

52. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further comprises the steps of spraying the molten cleansing agent (12) on the substrate (11).

53. The method of claim 40 further including the steps of squeezing excess molten cleansing agent (12) from the substrate (11) before allowing the molten cleansing agent (12) to cool down.

54. A cleansing pad manufactured according to the method of claim 40.

55. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further includes the steps of selectively applying the molten cleansing throughout the substrate (11).

56. The method of claim 40 wherein the step of applying the molten cleansing agent (12) to the substrate (11) further includes the steps of selectively applying different amounts and/or different formulations of the molten cleansing agent (12) to different portions of the substrate (11).

57. A method of manufacturing a cleansing device (10), comprising the steps of:

(a) providing a cleansing agent (12) that is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range;

(b) heating the cleansing agent (12) to within the second temperature range such that the cleansing agent (12) is in pourable molten form;

(c) immersing the substrate (11) in the molten cleansing agent (12) while compressing the substrate (11) to force air out of the substrate (11) and induce the transfusion of the molten cleansing agent (12) into the substrate (11); and

(d) allowing the cleansing agent (12) to cool down to within the first temperature range to resolidify on the substrate (11).

58. The method of claim 57 wherein step (c) of immersing the substrate (11) further includes the steps of injecting the molten cleansing agent (12) into the substrate (11) to transfuse additional molten cleansing agent (12) into the substrate (11).

59. The method of claim 57 wherein step (c) of immersing the substrate (11) further includes the steps of compressing the substrate (11) multiple times to force air out of the sponge.

60. The method of claim 59 wherein step (c) of immersing the substrate (11) further includes the steps of injecting the molten cleansing agent (12) into the substrate (11) to transfuse additional molten cleansing agent (12) into the substrate (11).

61. The method of claim 57 wherein step (c) of immersing the substrate (11) further includes the steps evacuating air out of the substrate (11) in a vacuum chamber to induce the transfusion of the molten cleansing agent (12) into the substrate (11).

62. A method of manufacturing a cleansing device (10), comprising the steps of:

(a) providing a first cleansing agent (12) that is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range;

(b) heating the first cleansing agent (12) to within the second temperature range such that the first cleansing agent (12) is in pourable molten form;

(c) applying the molten first cleansing agent (12) to one or more portions of a web of fibers that forms a substrate (11);

- (d) allowing the first cleansing agent (12) to cool down to within the first temperature range to resolidify on the substrate (11);
- (e) providing a second cleansing agent (12) that is in essentially solid form at a third temperature range, and in essentially pourable molten form at a fourth temperature range;
- (f) heating the second cleansing agent (12) to within the fourth temperature range such that the second cleansing agent (12) is in pourable molten form;
- (g) applying the molten second cleansing agent (12) to one or more portions of the substrate (11); and
- (h) allowing the second cleansing agent (12) to cool down to within the third temperature range to resolidify on the substrate (11).

63. An apparatus (100) for manufacturing a cleansing device (10), comprising:
a container (102) for holding a molten cleansing agent (12);
a support (108) for holding a substrate (11) comprising a web of fibers; and
a platform (109) that lowers the substrate (11) held by the support (108) into the container (102) such that at least a portion of the substrate (11) is immersed into the molten cleansing agent (12), wherein the substrate (11) absorbs the molten cleansing agent (12), and then the platform (109) raises the substrate (11) out of the container (108) allowing the molten cleansing (12) to cool down and solidify on the substrate (11).

64. The apparatus (100) of claim 63 wherein the platform (109) keeps said at least a portion of the substrate (11) immersed in the molten cleansing agent (12) for a period of time such that the substrate (11) absorbs the molten cleansing agent (12) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the solid cleansing agent (12) for cleansing purposes.

65. The apparatus (100) of claim 63 further comprising a press (110) for compressing the substrate (11) and decompressing the substrate (11) while said at least a portion of the substrate (11) is immersed in the molten cleansing agent (12) to induce transfusion of the molten cleansing agent (12) into the substrate (11).

66. The apparatus (100) of claim 63 wherein the cleansing agent (12) is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range.

67. The apparatus (100) of claim 66 further comprising a heating element (104) for applying heat to the solid cleansing agent (12) to raise the temperature of the cleansing agent (12) to the second temperature range whereby the solid cleansing agent (12) changes into the molten form.

68. An apparatus (200) for manufacturing a cleansing device (10), comprising:
a container (204) that holds a substrate (11) comprising a web of fibers;
a tank (202) that holds a molten cleansing agent (12) and supplies the molten cleansing agent (12) to the container (204) for absorption by the substrate (11); and
a press (212) that compresses the substrate (11) and decompresses the substrate (11) to induce transfusion of the molten cleansing agent (12) into the substrate (11).

69. The apparatus (200) of claim 68 wherein the cleansing agent (12) is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range.

70. The apparatus (200) of claim 68 further comprising an injector (310) that injects molten cleansing agent (12) into the substrate (11).

71. An apparatus (300) for manufacturing a cleansing device (10), comprising:
a support (204) for holding a substrate (11) comprising a web of fibers;

an injector (310) for injecting a molten cleansing agent (12) into the substrate (11); and

a platform (215) carrying the injector (310), wherein the platform (215) inserts the injector (310) into the substrate such that the injector (310) injects the molten cleansing agent (12) into the substrate (11).

72. The apparatus (300) of claim 71 wherein the platform (215) further retracts the injector (310) from the substrate (11), allowing the molten cleansing agent (12) to cool down and solidify in the substrate (11).

73. The apparatus (300) of claim 72 wherein the injector (310) injects the molten cleansing agent (12) into the substrate (11) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the solid cleansing agent (12) for cleansing purposes.

74. The apparatus (300) of claim 71 further comprising a press (212) for compressing the substrate (11) and decompressing the substrate (11) while the injector (310) injects the molten cleansing agent (12) to induce transfusion of the molten cleansing agent (12) into the substrate (11).

75. The apparatus (300) of claim 71 further comprising a sprayer (400) for spraying molten cleansing agent (12) onto the substrate (11).

76. The apparatus (300) of claim 71 wherein the cleansing agent (12) is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range.

77. An apparatus (500) for manufacturing a cleansing device (10), comprising:
a support (504) for holding a substrate (11) comprising a web of fibers; and
a sprayer (518) for spraying a molten cleansing agent (12) onto the substrate (11).

78. The apparatus (500) of claim 77 wherein the sprayer (518) sprays the molten cleansing agent (12) onto the substrate (11) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the solid cleansing agent (12) for cleansing purposes.

79. The apparatus (500) of claim 77 further comprising a press (506) for compressing the substrate (11) and decompressing the substrate (11) while the sprayer (518) sprays the molten cleansing agent (12) to induce transfusion of the molten cleansing agent (12) into the substrate (11).

80. The apparatus (500) of claim 77 wherein the cleansing agent (12) is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range.

81. An apparatus (500) for manufacturing a cleansing device (10), comprising:
an applicator (508) for applying a molten cleansing agent (12) to a substrate (11) comprising a web of fibers; and
a conveyer (10) for carrying the substrate (11) to the applicator (508) for the applicator (508) to apply the molten cleansing agent (12) to the substrate (11).

82. The apparatus (500) of claim 81 wherein the applicator (508) applies the molten cleansing agent to the substrate (11) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the solid cleansing agent (12) for cleansing purposes.

83. The apparatus (500) of claim 82 further including a controller (516) that controls the operation the applicator (508).

84. The apparatus (500) of claim 81 further comprising a press (506) for compressing the substrate (11) and decompressing the substrate (11) while the applicator

(508) applies the molten cleansing agent (12) to the substrate (11) to induce transfusion of the molten cleansing agent (12) into the substrate (11).

85. The apparatus (500) of claim 81 wherein the applicator (508) comprises an injector.

86. The apparatus (500) of claim 81 wherein the cleansing agent (12) is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range.

87. An apparatus (600) for manufacturing a cleansing device (10), comprising:
a container (610) for holding a molten cleansing agent (12);
a support (614) for holding a substrate (11) comprising a web of fibers;
a platform (604) that lowers the substrate (11) held by the support (614) into the container (610) such that at least a portion of the substrate (11) is immersed in the molten cleansing agent (12), wherein the substrate (11) absorbs the molten cleansing agent (12), and then the platform (604) raises the substrate (11) out of the container (610) allowing the molten cleansing (12) to cool down and solidify on the substrate (11); and

an injector (612) that injects molten cleansing agent (12) into the substrate (11).

88. The apparatus (600) of claim 87 wherein the platform (604) keeps said at least a portion of the substrate (11) immersed in the molten cleansing agent (12) for a period of time such that the substrate (11) absorbs the molten cleansing agent (12) in a quantity sufficient for multiple uses of the substrate (11) in conjunction with a solvent that dissolves the solid cleansing agent (12) for cleansing purposes.

89. The apparatus (600) of claim 87 further comprising a press (619) for compressing the substrate (11) and decompressing the substrate (11) while said at least a

portion of the substrate (11) is immersed in the molten cleansing agent (12) to induce transfusion of the molten cleansing agent (12) into the substrate (11).

90. The apparatus (600) of claim 87 wherein the cleansing agent (12) is in essentially solid form at a first temperature range, and in essentially pourable molten form at a second temperature range.

91. The apparatus (600) of claim 87 further comprising a controller (618) that controls the operation of the apparatus (600).